CLAIMS

1. A folding door system comprising:

a plurality of door panels rotatably inter-coupled for operating between a folded state and an unfolded state, the plurality of door panels comprising a first panel and a second panel forming extremities thereof;

a hinging means for coupling the first panel to a door frame for rotational displacement of the first panel about a first axis;

a track couplable adjacent a bottom surface of a top portion of the door frame and defining a path along a second axis, the second axis substantially perpendicular the first axis;

a roller carrier configured with the track for travel along the path, the roller carrier comprising:

a body having a threaded aperture whereto the support structure is rotatably coupled;

a support rod rotatably attached to the body;

a stopper located at an end portion of the body; and

a plurality of wheels are rotatably coupled to the body for supporting the body thereon;

a support structure comprising:

a first flange;

a second flange; and

a separator extending from the first flange whereto the second flange is couplable, the separator spatially disposing the first flange from the second flange for accommodating the second panel therebetween when the separator is received through an opening defined in the second panel,

wherein the track defines at least one channel for receiving and locating a plurality of wheels to the path;

wherein the support structure is rotatably coupled to the roller carrier for supporting at least one of the plurality of door panels from the track during travel of the roller carrier along the path when the plurality of door panels are operated between the folded state and the unfolded state.

wherein the support rod comprises a threaded portion for attaching to the threaded aperture of the body and a support end for holding the first flange that the support rod is rotatable in a clockwise and a counterclockwise direction.

2. The folding door system as in claim 1, the plurality of door panels being inter-coupled by at least one hinge.

3. The folding door system as in claim 1, the hinging means comprising at least one hinge rotatably coupled to the door frame.

4. The folding door system as in claim 1, at least one of the plurality of door panels being a glass panel.

5. The folding door system as in claim 1, the support rod is rotatable in clockwise or a counterclockwise direction to adjust relative distance in between the track ~~defining at least one channel for receiving and locating a plurality of wheels to~~and the ~~path~~support structure.

~~6. The folding door system as in claim 1, the roller carrier comprising:~~

~~a body having a threaded aperture whereto the support structure is rotatably coupled;~~

~~a support rod rotatably attached to the body; and~~

~~a stopper located at an end portion of the body.~~

~~wherein the plurality of wheels is rotatably coupled to the body for supporting the body thereon.~~

~~7~~6. The folding door system as in claim 1, the roller carrier providing a rolling engagement for the second panel with the door frame, wherein the roller carrier supports a vertical weight of the plurality of door panels.

~~8~~7. The folding door system as in claim 1, the separator being formed with the first flange.

~~9~~8. The folding door system as in claim 1, the separator enabling the second panel to be rotatable about a third axis, the third axis substantially perpendicular to the first axis and the second axis, wherein the third axis provides unimpeded movements of the plurality of door panels for operating between a folded state and an unfolded state.

~~10. The folding door system as in claim 6, the support rod comprising:~~

~~a threaded portion for attaching to the threaded aperture of the body; and~~

~~a support end for holding the first flange;~~

~~wherein the support rod is rotatable in a clockwise and a counterclockwise direction during the operation of opening and closing of the plurality of door panels.~~

~~11~~9. The folding door system of claim 1, the second panel comprising:

a planar surface having a front portion and a rear portion;

a pair of U-shaped handles;

wherein the pair of handles are detachably connected to each other at their end portions; and wherein the end portions are juxtaposed adjacent to the front portion and the rear portion of the planar surface of the first door panel.